CCA GCA ACC AAT GAT GCC CGT T-TAMRA-3' CA GCA ACC AAT GAT GCC CGT T-TAMRA-3'

CCA GCA AGC ACT GAT GCC TGT T-TAMRA-3' CA GCA AGC ACT GAT GCC TGT T-TAMRA-3'

Fig. 1A

Fluorescent Dyes

	Absorbance Maxima	Emission Maxima
Fluorescein	494nm	525nm
Tetrachloro fluorescein	521nm	536nm
TAMRA	565nm	580nm

Fig. 1B

Cleaved Fragments:

Fig. 1C

~

Fig.

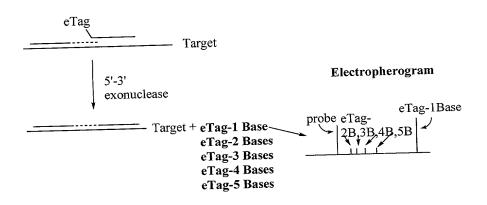


Fig. 3A

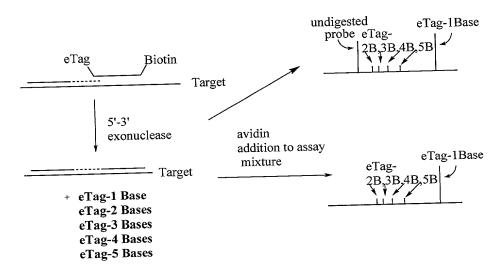


Fig. 3B

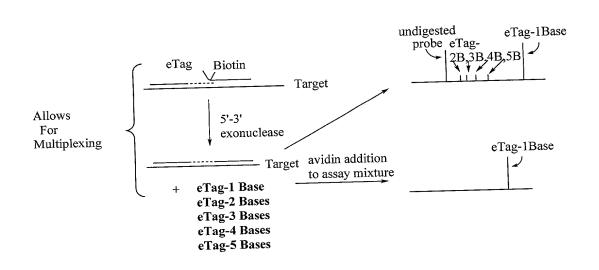


Fig. 3C

Fig. 3D

Fig. 4

e-tag Reporter	Elution Time on CE, min	Mass
COOH HN O P-O NH HO O O	6.4	778
CI CI COOH O CI O N HN O O O O	IH ₂ ^{>} N 7.1	925
CI CI COOH NH ₂ O CI O NH CI O O O O O O O O O O O O O O O O O O O	7.3	901
HO O O OH	H ₂ N 7.7	994
CI CI COOH O CI NH HN OMe OMe O-	8.0	985
CI CI COOH NH2 OHO OHO OHO OHO OHO OHO OHO	9.25	961

Fig. 5

e-tag Reporter	Charge	Elution Time, min		
O Fluorescein				
HN		13.14		
HN () 0-P-C ₃ C ₃ C ₃ C ₃ C ₃ -	dC	12.1*		
OFluorescein				
HN () O-P-O-C ₆ C ₆ C ₆ C ₆ C	C ₆ C ₆ — -9	12.7		
O Fluorescein	ЯС			
HNs Do C C C C	C 0	12.8		
$HN \xrightarrow{O} O-P-O-C_6C_6C_6C_6$	C ₆ — -8	12.0		
OFFluorescein HN O-P-O-C ₆ C ₆ C ₆ C ₆ C OFFluorescein				
HN () O-P-O-C6C6C6C6	-7	13.1		
O. Fluorescein	,qC			
O Fluorescein HN () O P O C ₃ C ₃ C ₉	6	13.0		
5 Ö-	-6 dC	13.0		
O Fluorescein O $+N$ $()$ 5 0 $-P$ $-O$ $-C_6C_6C_6$				
HN(-)_0-P-0-C6C6C6-	√ -6	13.4		
O _{s -} Fluorescein	,qC			
OF Fluorescein HN $\begin{array}{c} O = P - O - C_3C_3 \\ O = P - O - C_3C_9 \\ O = P - O - C_3C_9 O = P - O - C_3C_$	-5	12.8*		
(°) 0-p-0- c ₃ c ₃	IC -3	12.0		
OFluorescein	_	40.04		
HIN() O-P-O-C ₃ C ₉	-5	13.2*		
O _w Fluorescein				
O Fluorescein HN O P-O-C ₉ C ₉ O Fluorescein	-5	14.8		
O Fluorescein	С			
O Fluorescein	-6	17.3		
HN (-) O-P-O-TTTdC 5 O-	-0	17.5		
O _√ Fluorescein				
ΗΝ () O-P-O- TTdC	-5	17.0		
O_Fluorescein				
O Fluorescein O HN O -P-O-C ₉	-4	15.2*		
5 O- d	Т			
OFluorescein		4 / 10		
O Fluorescein O P-O-TdC	-4	16.5		
Fig 6				

Fig. 6

Fig. 7

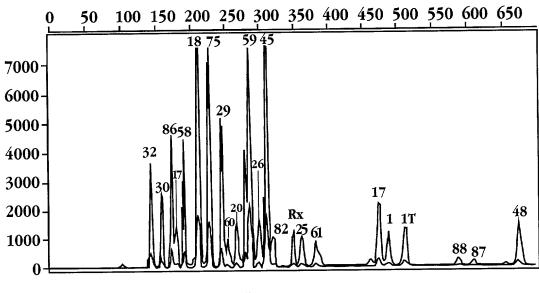


Fig. 8

Fig. 9

(9 negative charges per coupling)

Fig. 10

Fig. 11

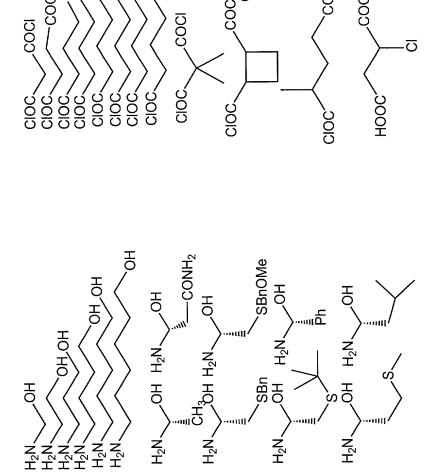
$$M = Mobility Modifier$$

$$M =$$

Fig. 12

$$\begin{array}{c} \text{HO} \longrightarrow \text{OH} \\ \text{CIOC-R-COCI} \\ \text{H}_2\text{O} \\ \text{H} \longrightarrow \text{Pyridine} \\ \text{H} \longrightarrow \text{Pyridine} \\ \text{HO} \longrightarrow \text{R} \longrightarrow \text{OH} \\ \text{H} \longrightarrow \text{R} \longrightarrow \text{R} \longrightarrow \text{CEO} \\ \text{R} = \text{commercial diacidchloride} \\ \text{X} = \text{commercial amino alcohol} \\ \end{array}$$

Fig. 13



SOCI

1000

CIOC

000

,000 ,000

. COCI

1000/

1, COC.

Fig. 14

C00H

_200Н

COCI

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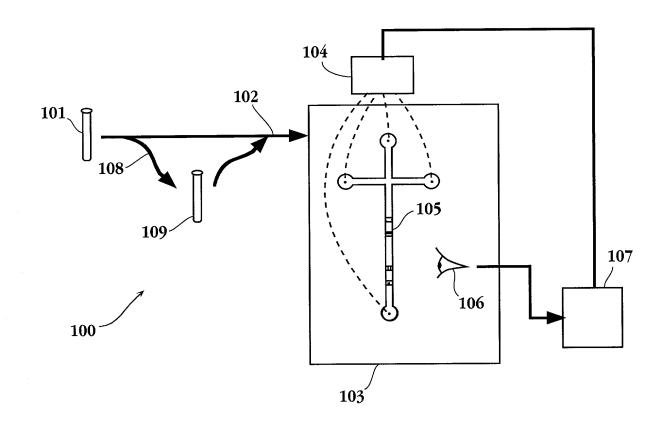


Fig. 16

ACLA001 ACLA007 Fluorescein ACLA008 ACLA002 Fluorescein dTdC ACLA009 ACLA003 **Fluorescein** ACLA004 ACLA010 Fluorescein _Fluorescein ACLA005 ACLA011 **Fluorescein** _Fluorescein dT(dT)₂dC ACLA006 ACLA012

Fig. 17A

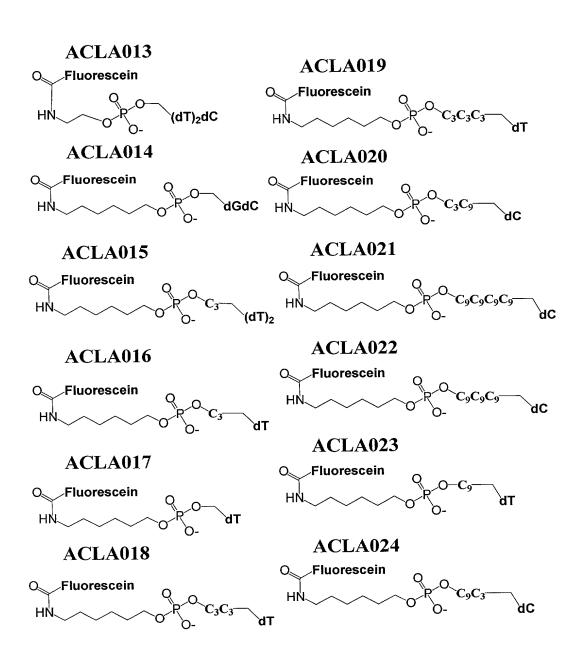


Fig. 17B

ACLA031 ACLA025 Fluorescein Fluorescein ACLA032 ACLA026 Fluorescein Fluorescein ACLA033 ACLA027 Fluorescein Fluorescein ACLA034 ACLA028 Fluorescein Fluorescein ACLA035 ACLA029 Fluorescein Fluorescein $(dT)_3$ ACLA036 ACLA030 Fluorescein Fluorescein **dTdG** ΗŃ

Fig. 17C

Fig. 17D

ACLA048

ACLA049

Fluorescein

ACLA050

ACLA051

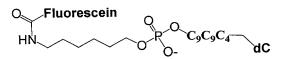
ACLA052

ACLA053

ACLA054

ACLA055

ACLA056



ACLA057

ACLA058

ACLA059

Fig. 17E

ACLA060 Fluorescein HN ACLA061 Fluorescein HN ACLA062 Fluorescein HN ACLA062 Fluorescein HN ACLA062

ACLA063 Fluorescein ACLA064 Fluorescein

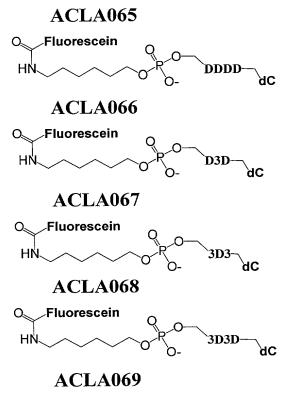


Fig. 17F

Fluorescein

Fig. 17G

Fig. 17H

ACLA089

Fluorescein

$$C_3C_3TC_3$$
 d T—O O dC

ACLA090

Fluorescein

$$C_3C_3C_3TC_3$$
 d T—O O O do

ACLA091

Fluorescein

$$C_{12}T$$
 d T C_{9} dC

ACLA092

Fluorescein

$$C_{12}TC_{12}$$
 d T C_{9} C_{9}

ACLA093

Fluorescein

$$C_{12}TC_{12}$$
 d C_{9} d C_{9}

ACLA094

Fluorescein

ACLA095

Fluorescein

ACLA096

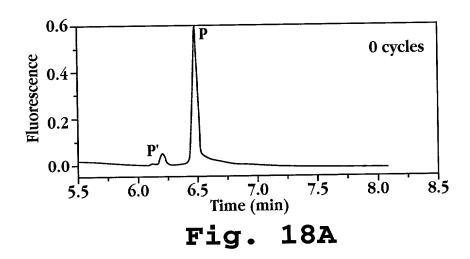
O Fluorescein

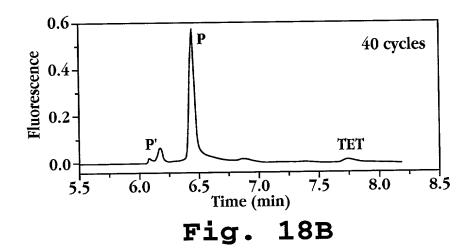
ACLA097

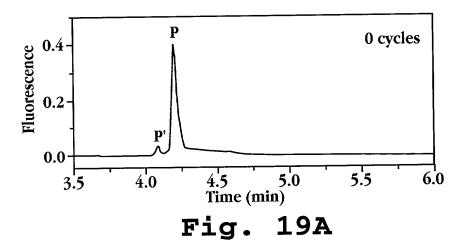
OFluorescein

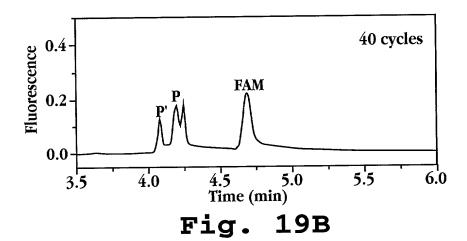
Fig. 17I

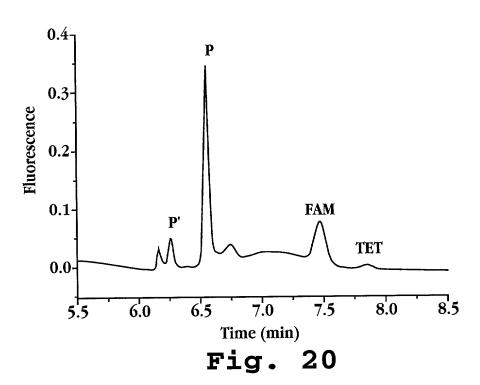
Fig. 17J











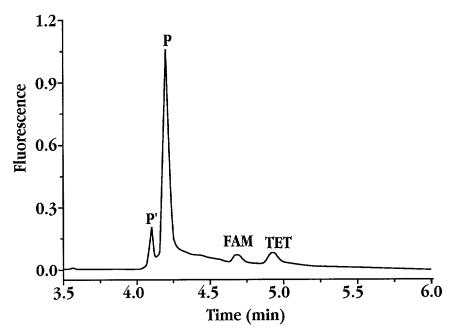


Fig. 21

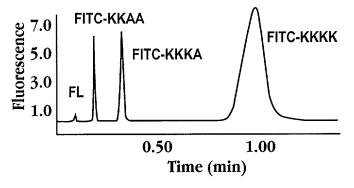


Fig. 22

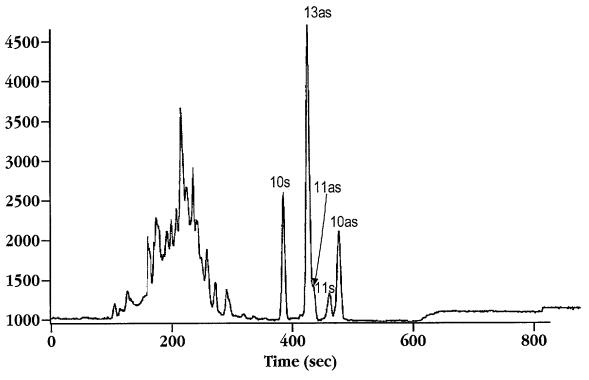


Fig. 23A

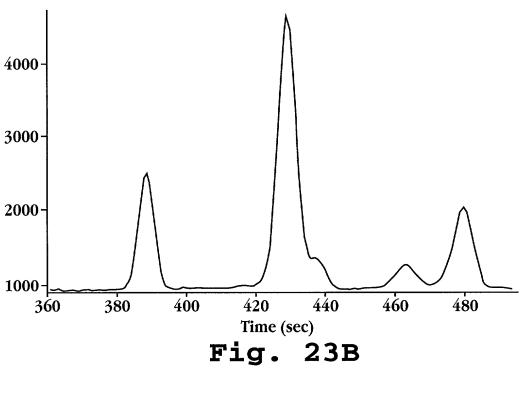


Fig.

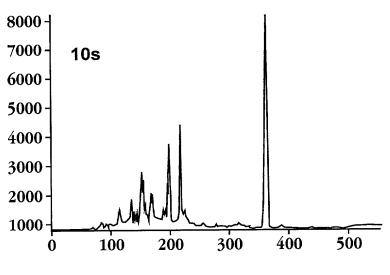


Fig. 23C

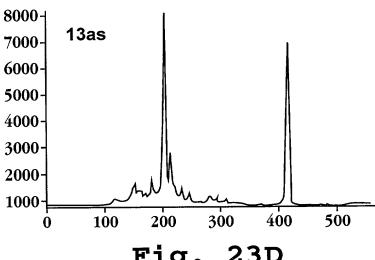


Fig. 23D

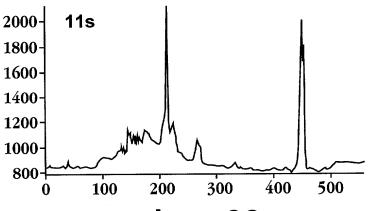


Fig. 23E

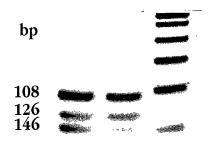
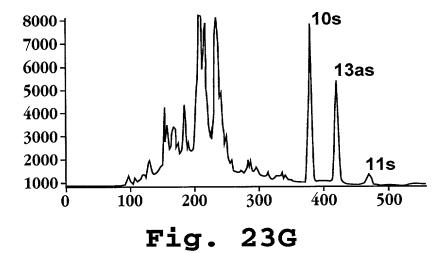


Fig. 23F



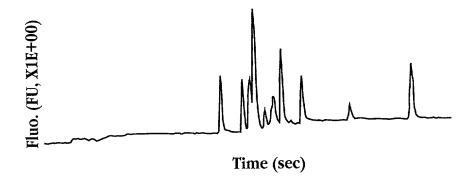


Fig. 24

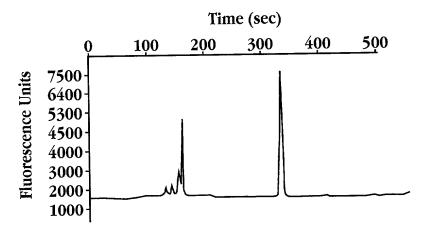
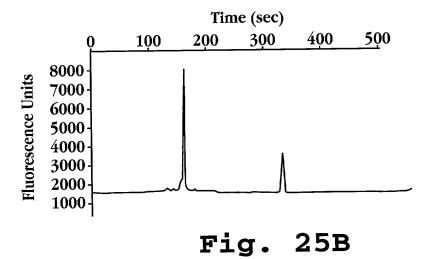
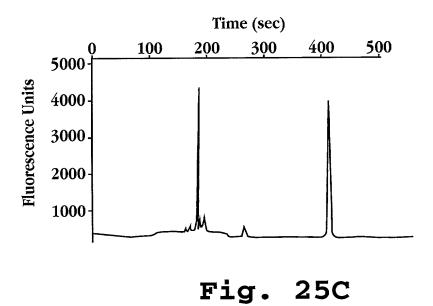


Fig. 25A





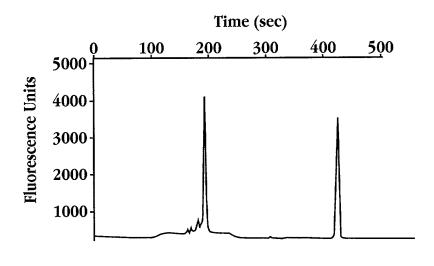


Fig. 25D

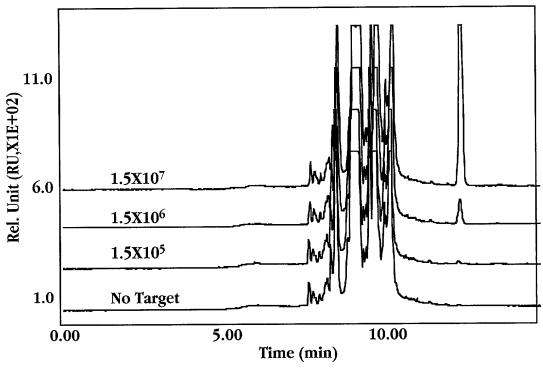


Fig. 26

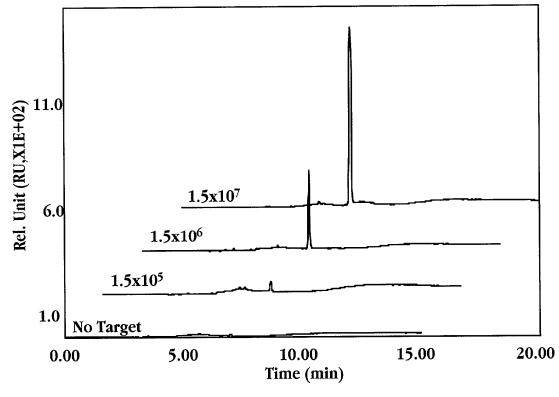


Fig. 27

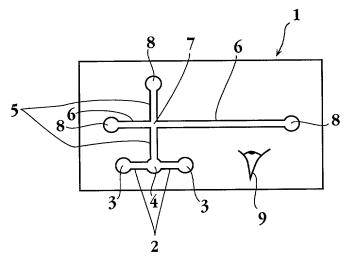


Fig. 28A

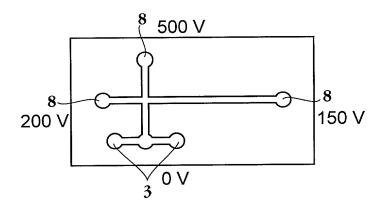


Fig. 28B

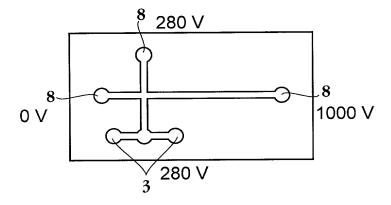


Fig. 28C

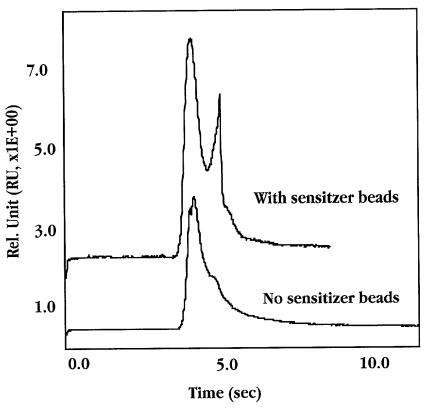
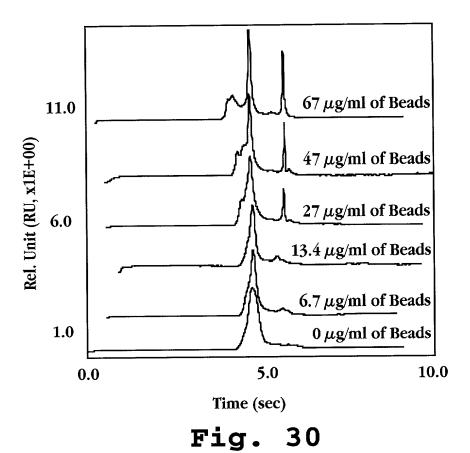


Fig. 29



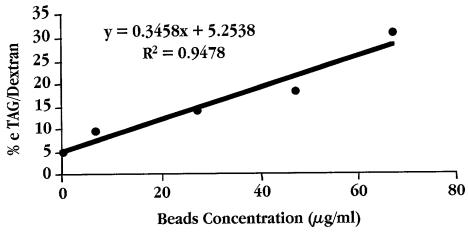


Fig. 31

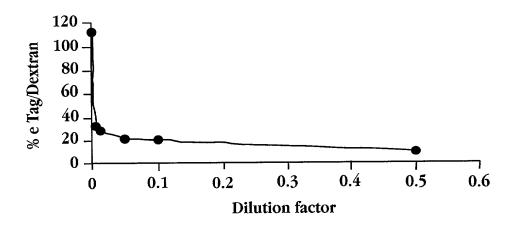


Fig. 32

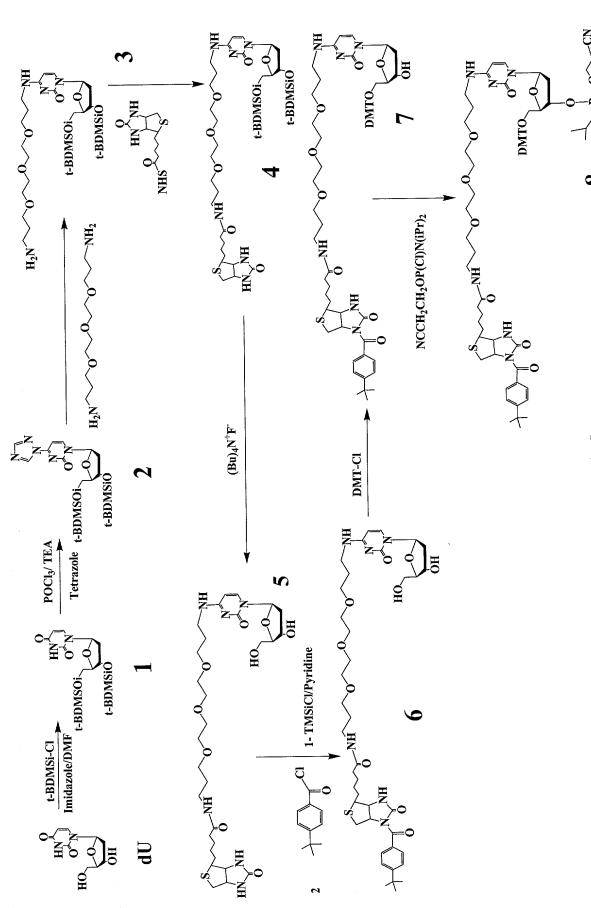


Fig. 33

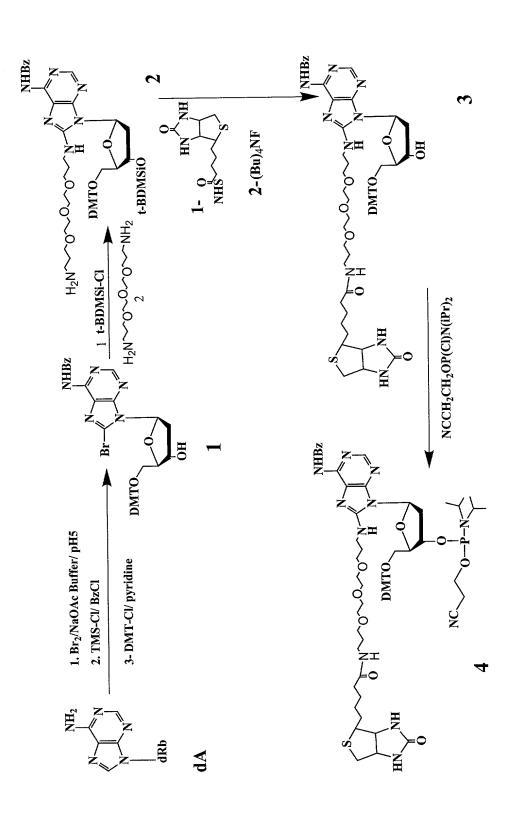


Fig. 34